

POLICY FOR STORM DRAINAGE FACILITIES

Except as otherwise noted herein, Director as used in this section shall mean the Director of the Transportation and Public Works Department or his/her designee.

The following policy shall govern the installation of all drainage facilities within the corporate limits of the City of Fort Worth, Texas:

1. **ENGINEERING AND SUPERVISION:**
 - A. The plans and specifications for the construction of all storm drainage facilities shall be in compliance with the Subdivision Ordinance, Plan Commission Rules and Regulations, and criteria of the Transportation and Public Works Department that shall include but not be limited to the following:
 - (1) The “Storm Drainage Criteria and Design Manual”, as amended; and
 - (2) Chapter 7, Article VIII, Floodplain Provisions of the Code, as same may be amended from time to time.
 - B. The developer shall employ an engineer proficient in civil engineering and registered in the State of Texas for preparation of the plans and specifications subject to approval of the Director. If the estimated construction cost is less than \$10,000, the developer may request the City prepare the plans and specifications for improvements. If the City agrees to prepare the plans and specifications, the developer shall pay the City ten percent (10%) of the actual construction cost as compensation for such design work.
 - C. The determination as to compliance of the plans and specifications with applicable policies, regulations and criteria shall be the sole responsibility of the Director. Where there is a question as to the justification or size of facilities required, doubt will be resolved in favor of additional drainage capacity.
 - D. The plans and specifications shall be prepared in accordance with the adopted procedures of the Transportation and Public Works Department. The Director shall establish a standard checklist to be used by Transportation and Public Works staff in the review of plans and specifications. Said checklist shall be made available to consultants, developers and developer representatives. While the list will be as comprehensive as possible, it must be recognized that the staff cannot be limited to review of only those items listed in all cases. Staff will:
 - (1) Review plans for compliance with established City policy and accepted engineering design.

- (2) Avoid commenting on items because of personal preference unless plans are unclear as prepared or the item is part of established policy.
 - (3) Thoroughly review items at the “Concept Review” and “Design Plan” review levels so as to minimize new comments concerning items previously submitted. This does not mean that potential problems should be ignored simply because they were previously overlooked.
- E. If the plans and specifications are prepared by the developer’s engineer, then these plans and specifications shall be submitted to the Director for the review and approval of the appropriate officials of the City. This review and approval process shall proceed as follows:
- (1) It is recommended that during the review of the preliminary plat a Drainage Plan and Concept Review of Engineering Problems be submitted to the Transportation and Public Works Department for review and comment. This will permit the City staff to better review the preliminary plat and encourage early resolution of difficulties, thereby minimizing time and work by the developer’s engineer. If these items are submitted at least ten (10) City working days prior to the Development Review Committee meeting, the City Staff should be able to reply in writing by the time that the Plan Commission considers the plat.
 - (2) If the drainage plan is not submitted in advance as recommended in paragraph (1) above, it must be submitted along with or before the design plan submittal. The drainage plan shall include all drainage areas that affect the area to be preliminary or final platted both in the natural state and in the ultimate development.
 - (3) A minimum of three (3) of design plans and specifications shall be submitted to the Transportation and Public Works Department for review. Additional sets may be required for other departments and/or agencies.
 - (4) If the design plans and specifications are incomplete, a letter stating the necessary changes to the plans and specifications and a set of the design plans and specifications marked with the necessary changes and/or comments shall be returned to the developer’s engineer for his use in the correction of the plans and specifications.

The Transportation and Public Works Department will attempt to complete each review within the number of City working days listed below:

<u>Review Stage</u>	<u>City Working Days</u>
Drainage Plan and Concept Review of Engineering Problems	* *
Design Plans and Specifications/ Contract Documents	15***
Final Plans	15

**If submitted according to Paragraph E(1) above, this review will run concurrently with the review of the preliminary plat.

***The first time design plans are submitted they shall be fully reviewed as final construction plans. When the plans and specifications are sufficiently complete, the cover sheet will be requested of the developer's engineer for issuing final approval.

Any of the following items may cause the review time to be suspended until a satisfactory resolution is made. It should be noted that some of the items below may be resolved concurrently with Plan Commission review of the preliminary plat.

- Request for (or implied) deviation from established minimum design standards;
- Specific request for deviation from established Development Policy;
- Design decisions or proposals yielding higher City costs than would result with minimum City standards;
- When the project includes unconstructed street and/or storm drainage facilities common to (or shared with) adjacent property for which a CFA has been executed or for which earlier design plans have been approved or
- For Preliminary Plans or Final Plans, lack of a preliminary plat approved by the Plan Commission, or an approved site plan in case of Unified Residential Developmental.

The Director shall determine the adequacy of the construction proposed by the developer's engineer.

- (5) The final plans shall be submitted when all comments, changes and corrections to the design plans and specifications have been made. The final plans shall be signed and dated by the Director and Director of Water Department upon approval. The developer's engineer shall be notified upon plan approval.
 - (6) The expiration of any CFA as provided for in Section II hereof shall result in the expiration of the City's approval of all plans and specifications for the proposed development. Future use of the plans and specifications shall require a new submittal, review and approval.
- F. All coordination required with public and/or private utility agencies to eliminate conflicts with proposed storm drainage facilities shall be the responsibility of the developer and/or his engineer. Coordination with agencies requiring special conditions (i.e., railroads and the Texas Department of Transportation) shall be the responsibility of the developer and/or his engineer.

2. CONSTRUCTION REQUIREMENTS:

- A. "Standard Specifications for Street and Storm Drain Construction" of the City of Fort Worth Transportation and Public Works Department will govern on all projects. A copy of the Standard Specifications may be purchased from the Transportation and Public Works Department.
- B. Construction of storm drainage facilities shall be by a contractor employed by the City or by a contractor employed by the developer.
- C. Storm drainage facilities and appurtenances shall be constructed to the line and grade established in the approved final plans.
- D. Drainage easements shall be provided by the developer along the entire length of the system for all storm drainage facilities and to an adequate outfall condition acceptable to the Director outside a public right-of-way.
- E. Under circumstances that would preclude an adequate outfall condition, an on-site detention system may be allowed. In this case, the design of the detention system shall be such that the additional runoff generated by the proposed development will be detained on site until it can be safely discharged off-site, and will not increase the amount of original discharge nor change the time of concentration downstream. The provision of either an adequate outfall condition or an on-site detention system shall be subject to the approval of the Director. Drainage easements along a required outfall channel or ditch shall be provided until the flowline "day lights" on natural grade. The minimum grade allowed on an outfall channel or ditch will be 0.2 foot per 100 feet. Drainage easements will generally extend at least twenty-five (25) feet past an outfall headwall to provide an area for maintenance operation.

- F. Each project and/or development phase shall provide a drainage system, which is fully functional and readily maintained.
- G. Border channels shall be improved as per the City of Fort Worth “Storm Drainageway Criteria and Design Manual” at the time of development unless conditions preclude improvements at that time as determined by the Director. In no case shall property adjacent to a recognized drainageway be final platted unless provisions are made for making it conform with all City drainageway and flood plain criteria. The drainage design must be in accordance with City design criteria to protect all platted property, shall not adversely affect property owned by others and the developing party is responsible to construct, if necessary, a reasonable portion of the drainageway applicable to the property being developed. In no case shall any segment or portion of the drainageway be neglected by the present or future development. This may consist of platting an easement capable of containing the 100-year flood and entering into a maintenance agreement for the land to be final platted.
- H. Storm flow resulting from a one hundred (100) year frequency storm once contained in a public drainage easement and/or right-of-way shall continue to be retained within public easements or rights-of-way, unless approved by the Director under a strictly controlled set of criteria.

3. DISTRIBUTION OF COST.

- A. For existing developments, the City shall bear the cost of drainage facilities where the drainage conditions, overall existing development, or planned improvement projects (e.g. street reconstruction) justify the installation of drainage facilities. Such financing of drainage facilities in these areas shall be limited to the availability of City funds and subject to the following exceptions:

Individual property owners may request the extension of an existing enclosed drainage facility across their property. Such an extension will be installed provided the benefited property owner supplies a drainage easement to the City free of cost and furnishes the required and necessary storm drainage pipe. Drainage facilities installed in conjunction with paving projects adjacent to platted property shall be at City expense, except portions of systems which are adjacent to undeveloped, newly developing or redeveloping (replatting) property or which extend out of the street right-of-way into new developments where it shall be financed in accordance with Paragraph 3(b) below.

- B. For new developments, redeveloping property and park property, the City shall participate in the cost of the storm drainage facilities located within a public right-of-way or easement that are 60 inch or greater in diameter and that will be accepted for maintenance by the City and become public facilities, based on the following:

- (1) For storm drain pipe larger than sixty (60) inches that crosses a public street, the City shall pay the difference between the material cost of the sixty 60 inch pipe and the larger pipe.
- (2) For all other storm drain pipes other than those crossing a public street larger than sixty (60) inches in diameter, the City shall pay twenty-five percent (25%) of the difference between the material cost of the sixty (60) inch pipe and the larger pipe.
- (3) There shall be no City participation in the cost of any trench and/or channel excavation, manholes, inlets, lead lines, headwalls, rip rap and/or any other items required to complete the system.
- (4) Channels: Where a channel is constructed, the City's participation shall be as follows:
 - a. Twenty-five percent (25%) of the cost of concrete lining in place provided the bottom of the channel is lined with concrete, rip-rap, or consists of natural solid rock.
 - b. Twenty-five percent (25%) of the cost of gabion lining provided that the channel bottom is lined either with concrete, rip-rap, or gabion; or the bottom of the channel consists of natural solid rock.
 - c. There shall be no City participation in the cost of any trench excavation, right-of-way, inlets, manholes, guard rail, seeding, sodding and/or any other appurtenances necessary to complete the drainage facilities.
- (5) Bridges and/or Culverts: Where a bridge or culvert is constructed, the City's participation shall be as follows:

Storm Draining Facilities

 - a) For structures smaller in area than or equal to a pipe size of sixty (60) inch (19.6 square feet) in diameter, area-wise, there shall be no City participation.
 - b) Where the structure is larger than a pipe of sixty (60") inches in diameter or is of some other shape with a cross sectional area of more than 19.6 square feet, the City shall base its share of the cost on the water shed area to be drained and will calculate its share according to the table below for any bridge and/or culvert for roadway in excess of fifty-four feet:

<u>Watershed Area</u> Acres	<u>City's Participation</u> (% of Cost)
Up to – 1,000	25
1,001 – 1,500	30
1,501 – 2,000	35
2,001 – 2,500	40
2,501 – 3,000	45
3,001 – 3,600	50
3,601 – 4,200	55
4,201 – 4,800	60
4,801 – 5,400	65
5,401 – 6,100	70
6,101 – 6,800	75
6,801 – 7,500	80
7,501 – 8,300	85
8,301 – 9,100	90
9,101 – 10,000	95
Over 10,000	100

- c. Except as noted above, there shall be no City participation in the cost of parkway improvements, including but not limited to pedestrian ways and guardrails.
 - d. If the City requires a roadway width greater than fifty-four (54) feet, one hundred percent (100%) of the additional cost of the drainage facility necessary for that excess width will be paid by the City in accordance with ordinances adopted by the City or based upon unit prices contained in competitive bids.
 - e. If the developer desires a roadway wider than determined necessary by the Director, there shall be no City participation for the additional cost of the drainage facility necessary for the excess width.
- (6) Storm flow shall not be diverted from its natural drainage course to a border street unless approved by the Director. At a minimum, in order for approval to be granted, there must be no increase in volume or velocity of the storm flow. When the Director approves the diversion of storm flow, there shall be no City participation for the additional cost of constructing and/or over sizing any drainage facility or appurtenance required to handle such diverted storm flow and the City's participation shall stay the same as if the diversion did not occur. No diversion shall occur unless the developer provides such studies as the Director may require.
- (7) The City shall pay engineering costs in the amount of six percent (6%) of the actual cost of the City's share of construction as calculated in accordance with ordinances adopted by the City or based upon unit prices contained in competitive bids.

4. GENERAL ARRANGEMENTS AND FINANCING:

- A. Subsequent to approval of the drainage plan, the preliminary subdivision plat, adequate plans and specifications, and cost estimates, the developer shall request a CFA to provide for the installation of the storm drainage improvements. Such request and accompanying information shall be in writing and addressed to the Director. No construction shall begin until developer and the City have executed a contract. See Section 104.100 of the Subdivision Ordinance, as amended.
- B. The Director shall review and may approve the drainage facilities deemed necessary by the developer's engineer.
- C. The award of contract shall be made in accordance with Section II.
- D. In the event that no funds are available for City participation, the developer may provide its financial guaranty (plus ten percent (10%) for engineering and miscellaneous costs if the City prepares the plans) and award the contract.
- E. The Director may require a developer to begin and complete construction of any storm drainage facility included in a developer contract when, in the judgment of the Director, the facility is needed for the proper and orderly development of the area.
- F. When the Director determines that a storm drainage facility should be constructed, he shall notify the developer in writing to make arrangements for construction of the facility. Within 15 calendar days after receiving the notice, the developer shall make arrangements for constructing the facility, including making the necessary payment to the City in accordance with this policy.
- G. Construction must be completed within 90 days from the date on which the developer receives notice from the City to proceed with construction. If construction has not been completed within the 90 day period, the City may take whatever action is required to insure prompt completion of the improvements, including, but not limited to, awarding a construction contract for the improvements and forfeiting the developer's financial guaranty to pay all costs resulting from failure of the developer to complete the improvements. Such costs shall include, but not be limited to, construction costs, engineering costs, administrative and legal expenses, and damages.

- H. Easements necessary to provide drainage for the development, together with access to the drainage ways, shall be provided to the City by the developer free of cost. There shall be no City participation for public drainage unless the developer provides access easements or rights-of-way. Where a public or community necessity for such easement(s) has been determined by the City Council, and the requesting developer provides written evidence including affidavits as appropriate, that he is unable to negotiate the purchase of the necessary easement(s) at a fair price, the City may expeditiously undertake to acquire same using its powers, provided the requesting developer agrees to pay the actual cost of the easement and any and all other costs connected with such attempted acquisition.

5. OWNERSHIP AND MAINTENANCE:

- A. All storm drainage facilities installed in connection with a development project and which is in a public easement and/or right-of-way shall be and shall remain the property of the City, and shall be operated and maintained by the City unless special agreements to the contrary are entered into by the developer and the City.
- B. The developer may choose to construct either a concrete or gabion lined channel or an improved earthen channel under the condition that current City standards are fully satisfied. When all City standards including special design criteria, are satisfied, the City shall operate and maintain the channel.
- C. The developer may request the Director to leave a "Natural Creek" in its natural state in accordance with current policy. A separate agreement regarding maintenance of the "natural creek" shall be required prior to approval of any such request and, if the developer is to maintain the "natural creek", the plat shall contain a perpetual maintenance statement. The developer shall also be required to enter into an indemnification agreement to indemnify the City from any harm that may come to person or property. Proper easements must be dedicated to the City for access and inspection by City personnel. All work, including but not limited to filling, on the creek must conform to criteria established in the City's "Storm Drainage Criteria and Design Manual" in which "Natural Creek" is defined.
- D. Drainageways adjacent to single family or duplex residential property shall be handled as a lined channel, improved earthen channel or "Natural Creek" as required in the City's "Storm Drainage Criteria and Design Manual".
- E. Should the Director determine that property zoned or used other than single family or duplex residential has special design limitations that make adherence to normal requirements for lined channels, improved earthen channels or "natural creeks" unreasonable, the property owner may enter into agreement with the City whereby the property owner accepts perpetual maintenance responsibilities for the drainage facility. Such an agreement shall be noted on the final plat and recorded in such a manner as to clearly run with the land.